

Claims:

1. A system for guiding the selection of a value for each of a plurality of parameters needed to perform a procedure with a medical system 100, comprising:
 - a first knowledge base 210 comprising procedures and treatment regimes;
 - a second knowledge base 212 comprising patient information and therapy history;
 - a third knowledge base 214 comprising clinical guidelines;
 - a domain ontology 220 provides the semantic mapping between information in the first, second, and third knowledge bases;
 - a system configuration database 226 containing physical characteristics pertaining to the medical system;
 - a system characteristics database 228 containing mathematical formulas and algorithms for calibrating the medical system based on the data in the system configuration database; and
 - an interference engine 224 for generating a set of parameters based on the information in the first, second, and third knowledge bases, the system configuration database, and the system characteristics database.
2. The system of claim 1 wherein said medical system is a medical imaging system.
3. The system of claim 2 wherein said medical imaging system is selected from the group consisting of computed tomography (CT) systems, x-ray systems, magnetic resonance (MR) systems, positron emission tomography (PET) systems, ultrasound systems, and nuclear medicine systems.
4. The system of claim 2 wherein said patient information and therapy history is stored in conformance with a DICOM Standard.

5. The system of claim 2 herein said patient information and therapy history is transmitted in conformance with a HL7 standard.
6. The system of claim 2 wherein said procedures and treatment regimes are stored in conformance with a DICOM standard.
7. The system of claim 6 wherein said DICOM standard is a DICOM Request Procedures Service Call.
8. The system of claim 2 wherein said clinical guidelines are represented in conformance with a standard selected from the group consisting of GLIF, EON, Asbru, Prodigy, Prestige, and ProForma.
9. The system of claim 2 wherein information in said first, second, and third knowledge bases is remotely located at least in part from the medical imaging system.
10. The system of claim 9 wherein the medical imaging system communicates with said first, second, and third knowledge bases over a computer network.
11. The system of claim 10 wherein said computer network is a local area network.
12. The system of claim 10 wherein said computer network is a wide area network.
13. The system of claim 12 wherein said wide area network is the Internet.
14. The system of claim 2 wherein said domain ontology is a nomenclature in conformance with SNOMED RT/CT.

15. A method for guiding the selection of a value for each of a plurality of parameters needed to perform a procedure with a medical imaging system on an individual patient, comprising:

- providing information pertaining to procedures and treatment regimes;
- providing information pertaining to patient information and therapy history for the individual patient;
- providing information pertaining to clinical guidelines;
- performing a semantic mapping between the information in the first, second, and third knowledge bases;
- providing information pertaining to physical characteristics of the imaging system;
- providing mathematical formulas and algorithms for calibrating the imaging system based on the information pertaining to physical characteristics of the imaging system; and
- generating a set of parameters based on the information pertaining to procedures and treatment regimes, the information pertaining to patient information and therapy history for the individual patient, the information pertaining to clinical guidelines, the information pertaining to physical characteristics of the imaging system, and the mathematical formulas and algorithms for calibrating the imaging system.

16. The method of claim 15 wherein said imaging system is selected from the group consisting of computed tomography (CT) systems, x-ray systems, magnetic resonance (MR) systems, positron emission tomography (PET) systems, ultrasound systems, and nuclear medicine systems.

17. The method of claim 15 wherein said patient information and therapy history is stored in conformance with a DICOM Standard.

18. The method of claim 15 wherein said patient information and therapy history is transmitted in conformance with a HL7 standard.

19. The method of claim 15 wherein said procedures and treatment regimes are stored in conformance with a DICOM standard.
20. The method of claim 19 wherein said DICOM standard is a DICOM Request Procedures Service Call.
21. The method of claim 15 wherein said clinical guidelines are represented in conformance with a standard selected from the group consisting of GLIF, EON, Asbru, Prodigy, Prestige, and ProForma.
22. The method of claim 15 wherein the information pertaining to procedures and treatment regimes, the information pertaining to patient information and therapy history for the individual patient, the information pertaining to clinical guidelines is remotely located at least in part from the medical imaging system.
23. The method of claim 22 wherein the medical imaging system communicates with said first, second, and third knowledge bases over a computer network.
24. The method of claim 23 wherein said computer network is a local area network.
25. The method of claim 23 wherein said computer network is a wide area network.
26. The method of claim 25 wherein said wide area network is the Internet.
27. The method of claim 15 wherein the semantic mapping is performed by a domain ontology in conformance with SNOMEDRT.